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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,488	10/17/2001	Jeffrey Skolnick	10886-045002	7996

7590 08/12/2003

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EXAMINER

CLOW, LORI A

ART UNIT

PAPER NUMBER

1631

DATE MAILED: 08/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/982,488	SKOLNICK ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Lori A. Clow, Ph.D.	1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                     | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. | 6) <input type="checkbox"/> Other: _____.                                   |

### **DETAILED ACTION**

Claims 9-11 are currently pending.

#### ***Objection to the Specification***

Applicants attempt to comply with the rules for priority documents is greatly appreciated, however, the attempt to incorporate subject matter into this application by reference to parent application 09/493,022 is improper because 09/493,022 was not part of the originally filed disclosure.

A preliminary amendment not filed along with the original application does not enjoy the status of part of the original disclosure. See MPEP § 608.04(b).

An incorporation by reference statement added after an application's filing date is not effective because no new matter can be added to an application after its filing date (see 35 U.S.C. 132(a)). If an incorporation by reference statement is included in an amendment to the specification to add a benefit claim under 35 U.S.C. 120 after the filing date of the application, the amendment would not be proper. When a benefit claim under 35 U.S.C. 120 is submitted after the filing of an application, the reference to the prior application cannot include an incorporation by reference statement of the prior application. See *Dart Indus. v. Banner*, 636 F.2d 684, 207 USPQ 273 (C.A.D.C. 1980). This objection may be overcome by deleting the phrase "incorporated by reference."

***Claim Rejections - 35 USC § 112***

Claim 9-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites a method comprising: (a) generating input data for the computer comprising: (i) inputting as a string **of** an identity constraint and a secondary structure constraint and/or tertiary constraints for some or all of the amino acid residues **residue** comprising the target protein. This language is confusing and it is unclear what is meant by inputting as a string **of** an identity constraint. Should this read "inputting as a string an identity constraint"? Also, correction is requested for the inclusion of the word "residue" two times.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 9 -11 are rejected under 35 U.S.C. 102(a) as being anticipated by Kolinski et al. (Proceedings of HRCL Workshop on Monte Carlo Approach to Biopolymers and Protein Folding.(1998) P. Grassberge et al., Eds., World Scientific, Singapore/London, pages 100-130:PTO-1449, reference AI).

Kolinski et al. disclose a computer-assisted method for determining three-dimensional structures of target amino acid sequences by utilization of a computer with a processor

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configured to receive and output data in accordance with executable code wherein secondary and tertiary data are input into the modeling technique (pages 122, lines 27-42 and page 123, lines 1-5). A computer is used for this method, which inherently has a processor. Executable code instructs the processor to produce from the string a three-dimensional reduced protein model comprised of side chain representations (page 114-116). Finally, data are output in the form of a three-dimensional model to a data storage device (see Figures 8-10), thus meeting the limitations of claim 9.

The model chains are constructed by taking into account the specific chirality and conformational restrictions of proteins. For example, distributions of distances between side chains in a globular protein are bimodal, which reflects the existence of helices and expanded states (identity constraints), as well as other properties of polypeptides (page 118, lines -13), meeting the limitations of claim 10. These are built into the model of Kolinski et al. (page 117, section 5).

Finally, the process of sequence similarity and sequence structure is described such that a multiple sequence threading alignment is performed and homologues are identified (page 124), meeting the limitations of claim 11.

Claims 9 -11 are rejected under 35 U.S.C. 102(a) as being anticipated by Kolinski et al. (J. Phys. Chem. (1998) Vol. 102, pp.4628-4637:PTO-1449, reference AJ).

Kolinski et al. teach a method for modeling polypeptide chains using a Monte Carlo simulation. In this method, Kolinski et al. again disclose the model generation described above, in which a computer-assisted method for determining three-dimensional structure of a target protein using a computer with a processor and executable code, wherein secondary and tertiary

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constraints are input and side chain representations of polypeptides are output (page 4630, 2.3; Figure 10). Local geometry of the secondary constraints is selected from helix (H), extended state (E), and everything else or "coil" (-) state (page 4634, column 2).

Finally, threading alignments are performed as discussed on page 4631, second column and page 4634, second column).

Claims 9 -11 are rejected under 35 U.S.C. 102(a) as being anticipated by Oritz et al. (Proceedings of the 3<sup>rd</sup> Pacific Symposium on Biocomputing (1998), Altman et al., Eds., World Scientific, Singapore/London, pages 377-388:PTO-1449, reference AL).

Oritz et al. disclose a computer-assisted method for determining three-dimensional structure of a target protein via a computer with a processor and code, as described above. Secondary and tertiary identity constraints are employed in this method (see Table 1 and page 379, column 2). Further, residues are assigned to one of five states, including helix, extended, and non-predicted (page 379), meeting the limitations of claim 10.

Finally, Figure 2 demonstrates the output of the model onto a storage medium.

No claims are allowed.

### *Inquiries*

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 CFR § 1.6(d)). The CM1 Fax Center number is either (703) 308-4242, or (703) 308-4028.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lori A. Clow, Ph.D., whose telephone number is (703) 306-5439. The examiner can normally be reached on Monday-Friday from 10am to 6:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael P. Woodward, Ph.D., can be reached on (703) 308-4028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Legal Instrument Examiner, Tina Plunkett, whose telephone number is (703) 305-3524, or to the Technical Center receptionist whose telephone number is (703) 308-0196.

MARJORIE MORAN  
PATENT EXAMINER

*Marjorie A. Moran*

August 6, 2003

Lori A. Clow, Ph.D.

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*Lori A. Clow*